Zachary DeFazio

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EDUCATION

Purdue University   West Lafayette, Indiana
*B.S. in **Computer Science**: GPA - 3.91/4.0*   *Graduating 2025*
*Minor in **Mathematics***

- **Relevant coursework: Data Structures, Computer Architecture, Programming in C, Discrete Mathematics, Statistics, Multivariable Calculus, Linear Algebra, Differential Equations**
- **Clubs: Launchpad Mentorship Program (Mentor), Purdue Hackers**

WORK EXPERIENCE

Aersys Inc.   Piscataway, New Jersey
Software Engineering Intern   *May 2023 − Aug 2023*

- Developed Configurator, a web-based application that is used to design industrial automation solutions using Unity, C#, and WebGL.
- Configurator uses a drag-and-drop interface to allow users to build custom configurations and view the result in a 3D environment with real-time data regarding configuration cost, power consumption, and expected ROI. Results can be serialized and stored on a cloud server hosted on AWS.

Morloc LLC
Software Engineering Intern   *Sep 2021 − Jun 2022*

- Tested prototype functional programming language Morloc. Morloc compiles code from different languages to allow users to collaborate on shared projects using different sources.
- Developed matrix libraries in C++ to create and transform matrices, preform matrix arithmetic, and calculate eigen values/vectors in order to create a machine learning library.

Purdue University   West Lafayette, Indiana
Resident Assistant   *Aug 2023 − Current*

- Manage a college residence hall and lead community events.
- Resolve conflicts between students and help maintain a safe environment.

PROJECTS

Derivative Models | *GitHub*

- A C++ project that contains object-oriented implementations of different financial derivative models used to price American, European and exotic options.
- Utilized binomial trees, trinomial trees, discounted expectation, and Monte Carlo simulation. Delta, gamma, vega, and rho can also be approximated to various degrees of precision.

language | *GitHub*

- A basic functional programming language with an interpreter as well as a command line REPL that can import functions from script files.
- The language is interpreted in Haskell, and uses pattern matching and recursion to parse, build the AST, and execute code. It borrows ideas from Haskell regarding program state, mutability, and strong types.

BCAVAM | *GitHub*

- An interactive website to display art for high school's art department in place of physical art show due to the COVID-19 pandemic.
- HTML, CSS and Unity/WebGL were used for front-end web design and NODE.js, Javascript, and Express for interactivity and back-end.

SKILLS

Programming:
  Proficient: Python, C, C++, Java
  Basic Understanding: C#, Javascript, Haskell, R

Developer Tools: Git, Unity, Make